

We claim:

1. A process for adsorption and subsequent reduction of hexavalent chromium to remove chromium from water, which comprises, reacting a dichromate solution with a ferrous-saponite clay.
2. A process as claimed in claim 1 wherein the ferrous-saponite is of the formula $\{Na_{0.60} K_{0.40} Ca_{0.47}\} [Mg_{2.05} Fe^{2+}_{3.95}](Si_{6.43} Al_{1.55}) O_{20}(OH)_4$, and contains only ferrous iron in the octahedral site.
3. A process as claimed in claim 1 wherein the adsorption and reduction of hexavalent chromium occurs simultaneously.
4. A process as claimed in claim 1 wherein the particle size of the ferrous-saponite clay is in the range of 0.1-5 μm .
5. A process as claimed in claim 1 wherein the clay fraction is separated by centrifuging and filtration.
6. A process as claimed in claim 1 wherein the concentration of the dichromate solution is 0.04 M.
7. A process as claimed in claim 1 wherein the reaction is effected at a temperature in the range of 50 to 200 $^{\circ}C$ for 1 to 3.0 hours.
8. A process as claimed in claim 1 wherein the clay is formed in reducing condition.